

## REMARKS

Claim 87 has been canceled without prejudice, and claims 84-86 and 88-134 are pending. Claims 84, 94, 96, 102, 103, 105 and 129 are currently amended and the remaining claims have been previously presented. The Examiner withdrew claims 105-134 from further consideration as drawn to a nonelected invention. Reference to page and line numbers in this response refer to the substitute clean copy of the specification submitted March 14, 2003, unless stated otherwise. The paragraph beginning on page 5, line 8 has been replaced to correct grammatical errors. None of the amendments made herein constitutes the addition of new matter.

### Restrictions

In the Office Action of July 30, 2003 the Examiner characterized the pending claims as the following inventions:

- I. Claims 84-104, drawn to a chimeric peptide nucleic acid construct, wherein the nucleic acid construct is linear.
- II. Claims 105-128 and 131-134, drawn to a chimeric peptide nucleic acid construct, wherein the nucleic acid construct is comprises a cyclic nucleic acid.
- III. Claims 129 and 130, drawn to a method of making a chimeric peptide nucleic acid construct.

In the Response to the Office Action of Sept. 23, 2003, Applicants elected Group 1 (claims 84-104) with traverse. The Examiner withdrew claims 105-134 from further consideration under 37 C.F.R. 1.142(b) in the Office Action of April 30, 2004. Reinstatement and rejoinder of Group II (claims 105-128 and 131-134) and Group III (claims 129 and 130) is respectfully requested.

Applicants request reinstatement and rejoinder because of the closeness of the claims of Groups I, II and III in light of the foregoing amendment to claims 84, 105 and 129. In particular, claims 105 and 129 were amended, as was claim 84, to include SEQ ID NO:1 and SEQ ID NO:22. These amendments make Groups I, II and III closely

related enough so as to not impose a serious burden on the Examiner in the context of prior art searching and substantive examination. Similar prior art would need to be compiled and analyzed for an evaluation of the patentability of each of Group 1, Group 2 and Group 3. Accordingly, Applicants respectfully request the withdrawn claims be reinstated and rejoined to elected claims 84 - 104.

#### The Rejections Under 35 U.S.C. 112, second paragraph

Claim 86 was rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite in the recitation of "partially palindromic." Applicants respectfully traverse this rejection and point out that partially palindromic is defined on page 21, line 2 as partial self-homology. A partially palindromic sequence is, therefore, a sequence that can form a hairpin loop. This is disclosed on page 24, lines 15-16 and exemplified in Fig. 1 where the 5' end of the nucleotide sequence is palendromic ("CCCC"). A person skilled in the art would understand that partially palindromic means that one section of the sequence is palindromic, such that a hairpin loop can form.

Claim 90 (and claims dependent therefrom (94, 95, 96)) was rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite in the recitation of "amino function." Amino function means the group is "aminoreactive" and can facilitate linkage via amino acids. Page 14, lines 15-22. For example, "the amino function of this modified base enables the linkage reaction between MBS and oligonucleotide." Page 16, lines 8-9; Page 24, lines 21-23.

Claim 91 was rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite in the recitation of "thiol function." Thiol function, similar to "amino function," refers to the ability to react with a thiol-reactive group. Page 14, line 20 - Page 15, line 1.

Claim 94 was rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite in the recitation of "localized," as allegedly unclear in the metes and bounds of

the linkage group location. We have amended claim 94 by replacing "localized" with "located." Support for this amendment is found on page 14, line 26 - page 15, line 8.

Claim 94 was also rejected under 35 U.S.C. 112, second paragraph, in the recitation of "hydroxy/phosphate" as allegedly unclear as to whether the linkage group is required to be at a terminal phosphate or hydroxy group. The claim has been amended to specify the linkage can occur at either the terminal hydroxy or the terminal phosphate group. This amendment is supported by the language on page 15, lines 1 - 3.

Claim 95 (and dependent claim 96) was rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite in the recitation of "replicative gene." The Applicants have defined "replicative gene" as having properties that result in: (1) controlled transcription; (2) replication, or (3) controlled transcription and replication within a targeted compartment. Page 5, lines 13-16. Applicants submit this definition found in the specification makes the term "replicative gene" definite for those skilled in the art.

Claim 96 was rejected under 35 U.S.C. 112, second paragraph, for improper antecedent basis. Claim 96 was amended to include "a promoter." Support for this amendment is found on page 16, lines 19-21 and on page 18, lines 8-10.

Claim 102 was rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite in the recitation of "groupings." "Groupings" was replaced with "function" to better agree with the terminology of the previous claims (see claims 90 and 91 definition of thiol and amino function).

Claim 103 was rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite in the recitation of "derivatives thereof" allegedly because a person skilled in the art could not distinguish a derivative from an entirely different molecule. Although Applicants submit that those skilled in the art understand derivatives include different molecules, wherein the derivative contains the same central structure, in the interest of furthering prosecution Applicants have deleted "or a derivative thereof".

In view of the foregoing discussion and amendments to the claims, Applicants respectfully request the withdrawal of the 35 U.S.C. 112 second paragraph rejection.

The Rejections Under 35 U.S.C. 112, first paragraph

Claims 92 and 93 were rejected under 35 U.S.C. 112, first paragraph, as new matter because the Examiner stated the Applicant did not point to support for the "two carbon" or "six carbon" linkage group amendment. Support for this amendment is found on page 15, lines 6-9 ("spaced from the 5' end or 3' end of the oligonucleotide or the modified base by at least one C2-spacer unit, but preferably by a C6-spacer unit") (corresponding to page 11, lines 6-10 of the original as filed Specification).

Claims 84-86 and 88-104 were rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement because these claims are drawn to a broad genus of mitochondrial signal peptides and the Examiner alleges the specification only discloses two members of the genus (SEQ ID NO:1 and SEQ ID NO:22).

In the Office Action the Examiner stated that Claim 87 would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims. In the interest in advancing prosecution and without acquiescing to the rejection, Applicants have canceled claim 87, and amended base claim 84 to include the limitations of the canceled claim 87. Claims 105 and 129 have been similarly amended to recite the sequence limitation of canceled claim 87.

In view of the foregoing and the amendment to the base claim, Applicants respectfully request the withdrawal of the rejection.

The Rejections under 35 U.S.C. 102

Claims 84-86, 89, 90, 92, 94, 97-99, 101-104 were rejected under 35 U.S.C. 102(b) as allegedly unpatentable over Vestweber et al. Vestweber et al. do not teach

the sequences contained in SEQ ID NO:1 or SEQ ID NO:22. In view of the amendment to the base claim to include the sequences contained in SEQ ID NO:1 or SEQ ID NO:22, Applicants respectfully request withdrawal this rejection.

#### The Rejections under 35 U.S.C. 103

Claims 84-86, 88-99, 101-104 were rejected under 35 U.S.C. 102(b) as allegedly unpatentable over Vestweber et al. in view of Williams et al., further in view of Latham et al. The cited references do not teach or suggest the sequences contained in SEQ ID NO:1 or SEQ ID NO:22. In view of the amendment to the base claim to include the limitation of allowable claim 87, Applicants respectfully request withdrawal this rejection.

#### Conclusion

In view of the foregoing, it is submitted that this case is in condition for allowance, and passage to issuance is respectfully requested.

If there are any outstanding issues related to restriction or patentability, the courtesy of a telephone interview is requested, and the Examiner is invited to call to arrange a mutually convenient time.

It is believed that an extension of two months is required. Therefore, a Petition for Extension of Time and a check in the amount of \$210 as required under 37 C.F.R. §1.17(a) are enclosed. It is believed that this amendment does not necessitate the payment of any additional fees. If this is incorrect, however, please charge any deficiency or credit any overpayment under the foregoing to Deposit Account No. 07-1969.

Respectfully submitted,



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